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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/803,625	03/18/2004	Alessandro Gallitognotta	59183-8059.US02	5807
7590	09/01/2005		EXAMINER	
Perkins Coie LLP P.O. Box 2168 Menlo Park, CA 94025			DONG, DALEI	
			ART UNIT	PAPER NUMBER
			2879	

DATE MAILED: 09/01/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/803,625

Applicant(s)

GALLITOGNOTTA ET AL.

Examiner

Dalei Dong

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 27 June 2005.
2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-7, 15, 17-23 and 29-34 is/are pending in the application.
4a) Of the above claim(s) _____ is/are withdrawn from consideration.
5) ☐ Claim(s) _____ is/are allowed.
6) ☒ Claim(s) 1-7, 15, 17-23 and 29-34 is/are rejected.
7) ☐ Claim(s) _____ is/are objected to.
8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
10) ☒ The drawing(s) filed on 18 March 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☒ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

1. The amendment filed June 27, 2005, has been entered and acknowledged by the Examiner.

Specification

2. Applicant is reminded of the proper content of an abstract of the disclosure.

A patent abstract is a concise statement of the technical disclosure of the patent and should include that which is new in the art to which the invention pertains. If the patent is of a basic nature, the entire technical disclosure may be new in the art, and the abstract should be directed to the entire disclosure. If the patent is in the nature of an improvement in an old apparatus, process, product, or composition, the abstract should include the technical disclosure of the improvement. In certain patents, particularly those for compounds and compositions, wherein the process for making and/or the use thereof are not obvious, the abstract should set forth a process for making and/or use thereof. If the new technical disclosure involves modifications or alternatives, the abstract should mention by way of example the preferred modification or alternative.

The abstract should not refer to purported merits or speculative applications of the invention and should not compare the invention with the prior art.

Where applicable, the abstract should include the following:

- (1) if a machine or apparatus, its organization and operation;
- (2) if an article, its method of making;
- (3) if a chemical compound, its identity and use;
- (4) if a mixture, its ingredients;
- (5) if a process, the steps.

Extensive mechanical and design details of apparatus should not be given.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

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(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

4. Claims 1, 2, 4-7, 17, 18, 20-23 and 29-34 rejected under 35 U.S.C. 102(e) as being anticipated by Japanese Patent 2002-313277 to Yasuo.

Regarding to claim 1, Yasuo discloses in Figure 1, a cathode (4) the cathode formed by a cylindrical hollow part closed at first end and open at a second end, wherein an outer and inner surface portion of the cylindrical hollow part includes a layer of getter material (6).

Regarding to claim 2, Yasuo discloses in Figure 1, the cylindrical hollow part is made essentially of metal.

Regarding to claim 4, Yasuo discloses in Figure 1, the layer of getter material (6) is formed of a metal selected among the group consisting of: titanium, vanadium, yttrium, zirconium, niobium, hafnium and tantalum.

Regarding to claim 5, Yasuo discloses in Figure 1, the layer of getter material (6) is an alloy that includes zirconium or titanium combined with one or more elements selected among the group of transition metals and aluminum.

Regarding to claim 6, please note that the claimed method steps are product by process limitations. Even though product-by-process claims are limited by and defined by the process, determination of patentability is based on the product itself. The patentability of a product does not depend on its method of product. If the product in the product-by-process claim is the same as or obvious from a product of the prior art, the claim is unpatentable even though the prior product was made by a different process. In *re Thorpe*, 777 F.2d 695, 698, 227 USPQ 964, 966 (Fed. Cir. 1985).

Furthermore, it is well established that a claimed apparatus cannot be distinguished over the prior art by a process limitation. Consequently, absent a showing of an obvious difference between the claimed product and the prior art, the subject product-by-process claim limitation is not afforded patentable weight (see MPEP 2113).

Regarding to claim 7, please note that the claimed method steps are product by process limitations. Even though product-by-process claims are limited by and defined by the process, determination of patentability is based on the product itself. The patentability of a product does not depend on its method of product. If the product in the product-by-process claim is the same as or obvious from a product of the prior art, the claim is unpatentable even though the prior product was made by a different process. In *re Thorpe*, 777 F.2d 695, 698, 227 USPQ 964, 966 (Fed. Cir. 1985).

Furthermore, it is well established that a claimed apparatus cannot be distinguished over the prior art by a process limitation. Consequently, absent a showing

of an obvious difference between the claimed product and the prior art, the subject product-by-process claim limitation is not afforded patentable weight (see MPEP 2113).

Regarding to claim 17, Yasuo discloses in Figure 1, a cathode (4), the cathode (4) formed by a cylindrical hollow part closed at a first end and open at a second end, wherein on an outer or inner portion of the surface of the cylindrical hollow part is present a layer of getter material (6), and wherein a portion of the surface near the first end of the cathode (4) is free of the layer of getter material (6).

Regarding to claim 18, Yasuo discloses in Figure 1, the cylindrical hollow part is made essentially of metal.

Regarding to claim 20, Yasuo discloses in Figure 1, the layer of getter material (6) is formed of a metal selected among the group consisting of: titanium, vanadium, yttrium, zirconium, niobium, hafnium and tantalum.

Regarding to claim 21, Yasuo discloses in Figure 1, the layer of getter material (6) is an alloy that includes zirconium or titanium combined with one or more elements selected among the group of transition metals and aluminum.

Regarding to claim 22, please note that the claimed method steps are product by process limitations. Even though product-by-process claims are limited by and defined

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by the process, determination of patentability is based on the product itself. The patentability of a product does not depend on its method of product. If the product in the product-by-process claim is the same as or obvious from a product of the prior art, the claim is unpatentable even though the prior product was made by a different process. In re Thorpe, 777 F.2d 695, 698, 227 USPQ 964, 966 (Fed. Cir. 1985).

Furthermore, it is well established that a claimed apparatus cannot be distinguished over the prior art by a process limitation. Consequently, absent a showing of an obvious difference between the claimed product and the prior art, the subject product-by-process claim limitation is not afforded patentable weight (see MPEP 2113).

Regarding to claim 23, please note that the claimed method steps are product by process limitations. Even though product-by-process claims are limited by and defined by the process, determination of patentability is based on the product itself. The patentability of a product does not depend on its method of product. If the product in the product-by-process claim is the same as or obvious from a product of the prior art, the claim is unpatentable even though the prior product was made by a different process. In re Thorpe, 777 F.2d 695, 698, 227 USPQ 964, 966 (Fed. Cir. 1985).

Furthermore, it is well established that a claimed apparatus cannot be distinguished over the prior art by a process limitation. Consequently, absent a showing of an obvious difference between the claimed product and the prior art, the subject product-by-process claim limitation is not afforded patentable weight (see MPEP 2113).

Regarding to claim 29, Yasuo discloses in Figure 1, a portion of the surface near the second end is at least partially covered by the layer of getter material (6).

Regarding to claim 30, Yasuo discloses in Figure 1, the getter layer (6) is present on the inner portion of the surface.

Regarding to claim 31, Yasuo discloses in Figure 1, the getter layer is present on the outer portion of the surface.

Regarding to claim 32, Yasuo discloses in Figure 1, the getter layer (6) is present on the inner and outer portion of the surface.

Regarding to claim 33, Yasuo discloses in Figure 1, a portion of the surface near the second end of the cathode is free of the layer of getter material (6).

Regarding to claim 34, Yasuo discloses in Figure 1, a cylindrical hollow cathode (4) having a first end and a second end, wherein the second end of the cylindrical hollow cathode is closed, and wherein an inner surface of the cylindrical hollow cathode is partially covered by a layer of getter material (6).

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 3, 19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Japanese Patent 2002-313277 to Yasuo in view of U.S. Patent No. 5,856,726 to Evans of record.

Regarding to claim 3, Yasuo discloses in Figure 1, a cathode (4) the cathode formed by a cylindrical hollow part closed at first end and open at a second end, wherein an outer and inner surface portion of the cylindrical hollow part includes a layer of getter material (6).

However, Yasuo does not disclose the metal includes material chosen from among the group consisting of nickel, molybdenum, tantalum and niobium.

Evans teaches in Figures 1 and 2, a cathode (28), formed by cylindrical hollow part made of metal material chosen from among the group consisting of nickel, molybdenum, tantalum and niobium (see column 4, lines 27-32) for the purpose of achieving high conductivity and high temperature durability.

Thus, it would have been obvious to one having ordinary skill in the art at the time the invention was made to have utilize the electrode material of Evans for the cathode of Yasuo in order to achieve high conductivity and high temperature durability.

Regarding to claim 19, Evans teaches in Figures 1 and 2, the metal includes material chosen from among the group consisting of nickel, molybdenum, tantalum and niobium (see column 4, lines 27-32) and the motivation to combine is the same as above.

7. Claim 15 is rejected under 35 U.S.C. 103(a) as being unpatentable over Japanese Patent 2002-313277 to Yasuo in view of U.S. Patent No. 3,582,702 to Almer of record.

Regarding to claim 15, Yasuo discloses in Figure 1, a cathode (4) the cathode formed by a cylindrical hollow part closed at first end and open at a second end, wherein an outer and inner surface portion of the cylindrical hollow part includes a layer of getter material (6).

However, Yasuo does not disclose the layer of getter material is less than 20 microns thick.

Almer teaches a cathode with a getter layer of less than 20 microns thick (see column 4, lines 56-58) for the purpose of improving gas binding.

Thus, it would have been obvious to one having ordinary skill in the art at the time the invention was made to have manufactured the getter layer of Yasuo with thickness of less than 20 microns of Almer in order to improving gas binding.

Response to Arguments

8. Applicant's arguments with respect to claims 1-7, 15, 17-23 and 29-34 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

9. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

The following prior art are cited to further show the state of the art of composition of a cathode.

U.S. Patent No. 5,256,935 to Dobashi.

U.S. Patent No. 5,572,088 to Aizawa.

U.S. Patent No. 5,898,272 to Mohacsi.

U.S. Patent No. 6,853,139 to Yamashita.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Dalei Dong whose telephone number is (571)272-2370. The examiner can normally be reached on 8 A.M. to 5 P.M..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nimeshkumar Patel can be reached on (571)272-2457. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



D.D.

August 24, 2005



Joseph Williams
Primary Examiner
Art Unit 2879